

## CLAIMS

1. A process for preparing polymer / food grade hydrocarbon solvents of naphtha range containing very low aromatics, especially benzene less than 20ppm from naphtha range petroleum stock, said process comprising:
  - a. heating the naphtha range petroleum feed to a temperature in the range of 70°–180°C;
  - b. adding stoichiometric amount of hydrogen to the naphtha range petroleum feed at a pressure between about 5 to 30 bar;
  - c. passing the mixture of feed and hydrogen through a reactor having a nickel based catalyst;
  - d. removing any excess hydrogen to obtain the polymer / food grade hydrocarbon solvents of naphtha range containing very low aromatics.
2. A process as claimed in claim 1, wherein the naphtha range petroleum feed is preferably raffinate from the solvent extraction units employed for recovery of aromatics from reformat.
3. A process as claimed in claim 1, wherein the raffinate feed has sulfur < 50ppm, preferably < 5ppm and most preferably < 1ppm.
4. A process as claimed in claim 1, wherein the raffinate feed has aromatics < 20% by wt and preferably < 10% by wt.
5. A process as claimed in claim 1, wherein the raffinate feed has benzene < 20% by wt and preferably < 10% by wt.
6. A process as claimed in claim 1, wherein the raffinate feed has boiling point in the range of C<sub>5</sub> to 110°C.
7. A process as claimed in claim 1, wherein the raffinate feed has boiling point in the range of 63°–70°C.

8. A process as claimed in claim 1, wherein the raffinate stream has about 4-7% by wt benzene.
9. A process as claimed in claim 1, wherein the catalyst is nickel supported on alumina catalyst.
10. A process as claimed in claim 1, wherein the nickel loading is about 10 to 70% by wt. and preferably is about 30 to 60% by wt.
11. A process as claimed in claim 1, wherein the metal surface area of the nickel-alumina catalyst is about 10-20 m<sup>2</sup>/g.
12. A process as claimed in claim 1, wherein the physical surface area of the nickel-alumina catalyst is about 120-200 m<sup>2</sup>/g and the pore volume of the catalyst is about 0.2-0.3.
13. A process for producing polymer / food grade solvents of naphtha range from paraffin rich hydrocarbon streams through hydroprocessing.
14. A process according to claim 1 where in the product solvent contains nil olefins, Sulfur less than 1 ppm and aromatics, especially, Benzene less than 20 ppm.
15. A process according to claim 1 where in the Feed is low value raffinate from BTX extraction column e.g. Udex unit.
16. A process according to claim 1 where in the feed has maximum 20 wt% aromatics and 10 wt% Benzene.
17. A process according to claim 1 where in process is carried out under hydrogen environment preferably at 80-150°C, and 10 to 20 bar.

18. A process according to claim 1 where in Metals of Group VIII supported on Inert material, preferably Ni (30-60 wt%) supported on alumina are used.
19. A process according to claim 9 where in Oxided Ni catalyst is pre-reduced before loading into the reactor.
20. A process for preparing polymer / food grade hydrocarbon solvents of naphtha range containing very low aromatics such as herein described with reference to the accompanying examples.